# 2010-11-04 Thursday Morning Notes

Thursday, November 04, 2010
7:04 AM

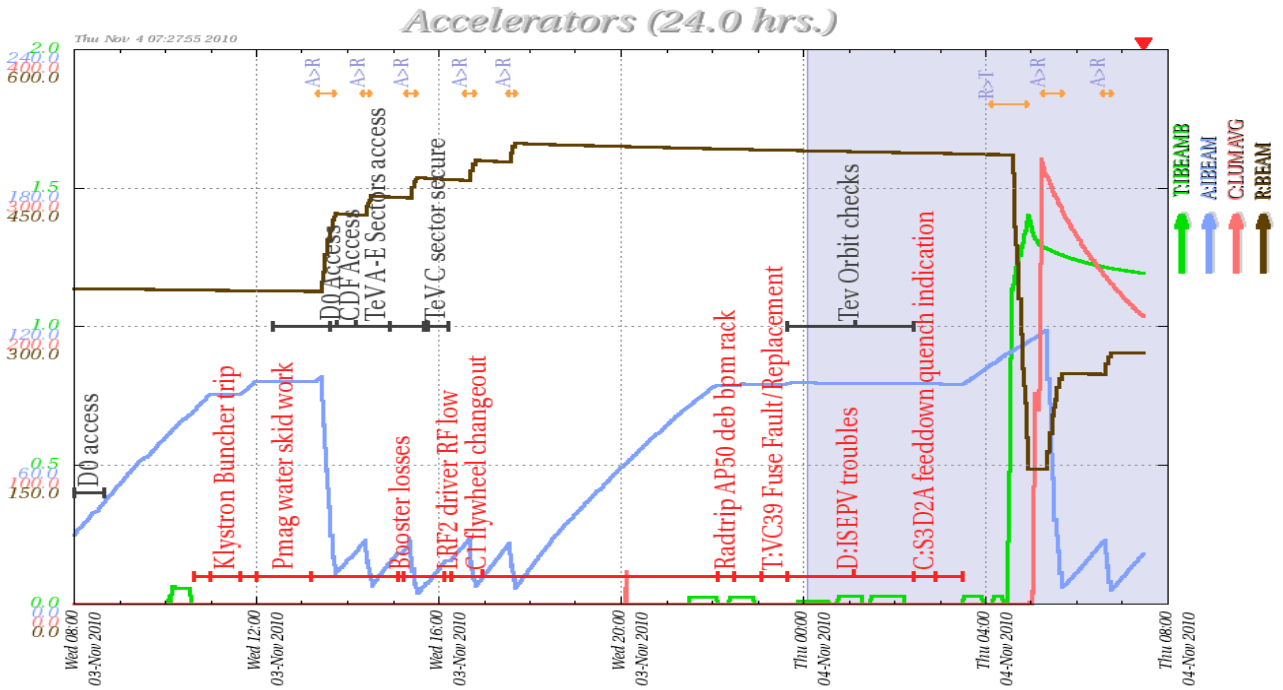
## Stacking and Transfers

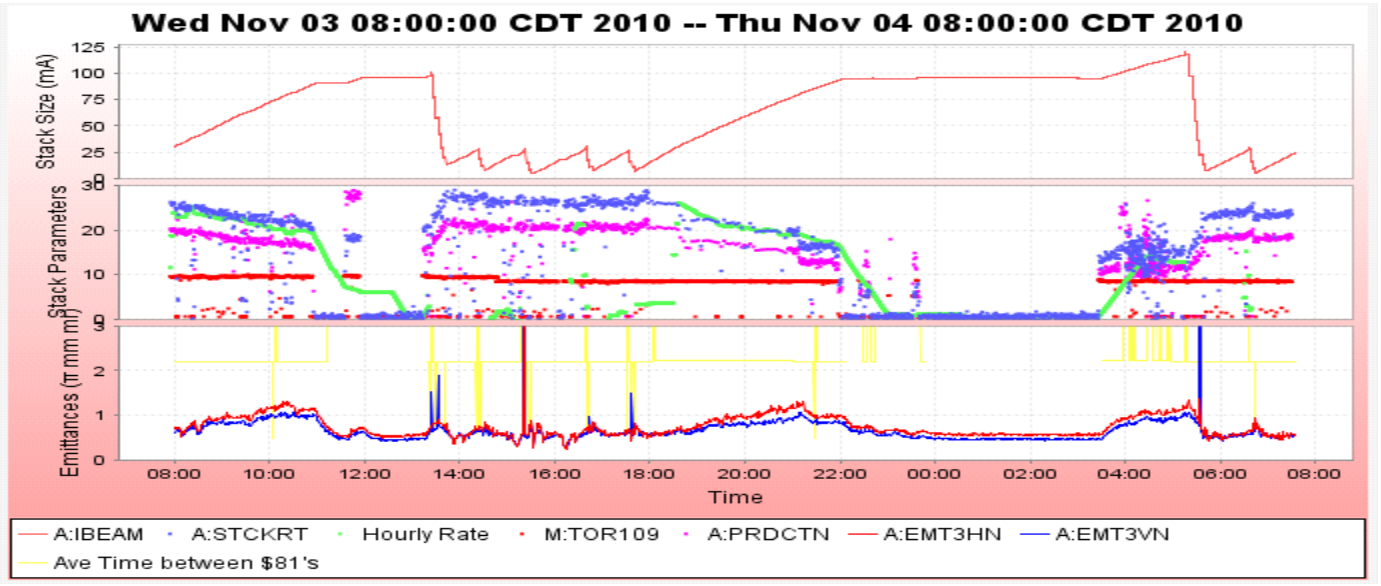
- D:ISEP was charging OK, but intermittently discharging, because the charge recovery circuit was not working. This will make the “Pulse PS Power Module" to work harder, and cause the transformer inside the "Pulse PS Power Module", to overheat and give off a burnt smell. Replaced the "Pulse PS Power Module" #04, with a good "Pulse PS Power Module" #06. The charge recovery was not working, because the short piece of RG220 cable, which goes from the capacitor bank to the charge recovery choke, was arcing over on what was left of the braided ground cable, at the capacitor end. The cable was replaced, and the Septum is now working. – D. Peterson, A. Leveling, B. Wisner
  Pasted from <http://www-bd.fnal.gov/cgi-mach/machlog.pl?nb=pbar10&action=view&page=last&frame=2&anchor=&hilite=&load=>
- D:V901 power supply had a small LCW leak.  Bernie replaced a leaking hose above transformer T2.
- **Rescaled M:TOR109** to more closely agree with M:TR105B. TOR109's C1 scale factor was changed from 1.0 to 0.9 using D80
- Stacktail TWT #5 is dead (A:SPTW05). On 10/30 MI went off for 17 minutes due to a power supply problem. When they got back on, the power out of A:SPTW05 had dropped significantly, and at 19:22 it died. Since the reverse power on the tube dropped as well, I'm pretty sure it is not a diode card.  I took a look locally at the helix supply and everything looks fine - normal collector and helix currents. We'll leave this one for Pete & Wes in the morning. When they get this fixed (assuming it is the tube that's broken) I'll need about 20 minutes of no stacking and >20.0mA to phase it in.
- Water cage access found a bad chip on the card that control the auto venting

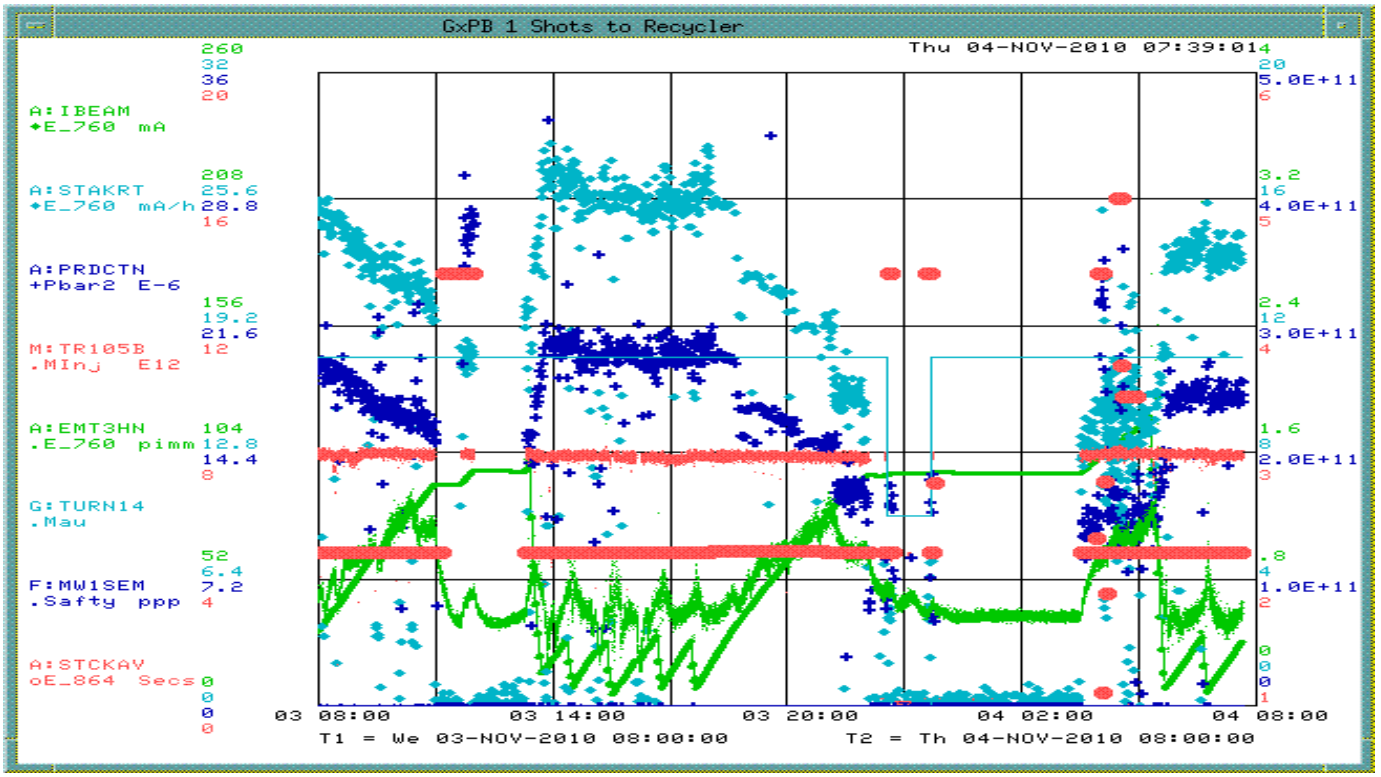
## Numbers

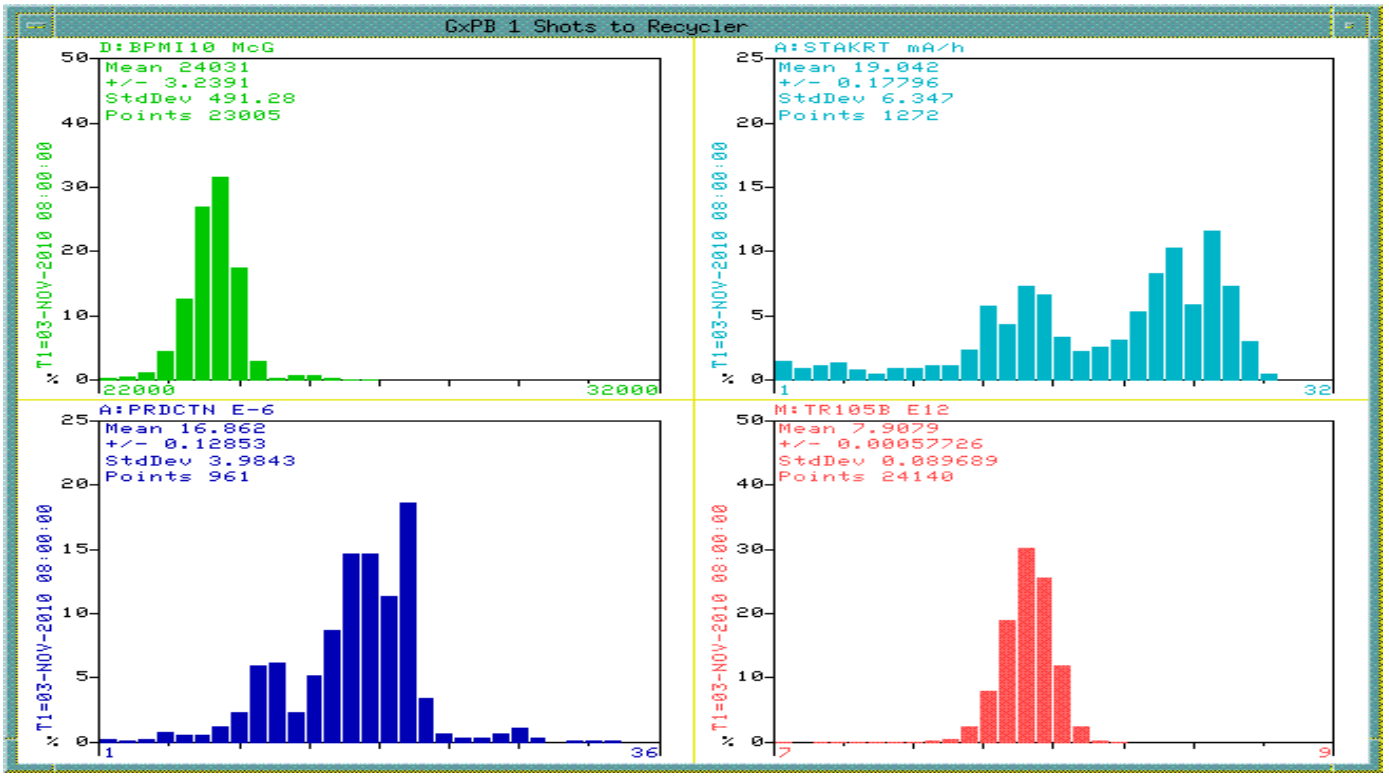
- Stacking
  - Pbars stacked: 330.21 E10
  - Time stacking: 18.20 Hr
  - Average stacking rate: 18.14 E10/Hr
- Uptime
  - Number of pulses while in stacking mode: 27113
  - Number of pulses with beam: 24711
  - Fraction of up pulses was: 91.14%
- The uptime's effect on the stacking numbers
  - Corrected time stacking: 16.59 Hr
  - Possible average stacking rate: 19.90 E10/Hr
  - Could have stacked: 362.31 E10/Hr
- Recycler Transfers
  - Pbars sent to the Recycler: 318.93 E10
  - Number of transfers : 27
  - Number of transfer sets: 7
  - Average Number of transfer per set: 3.86
  - Time taken to shoot including reverse proton tuneup: 00.09 Hr
  - Transfer efficiency: 93.69%
- Other Info
  - Average POT : 7.88 E12
  - Average production: 16.95 pbars/E6 protons

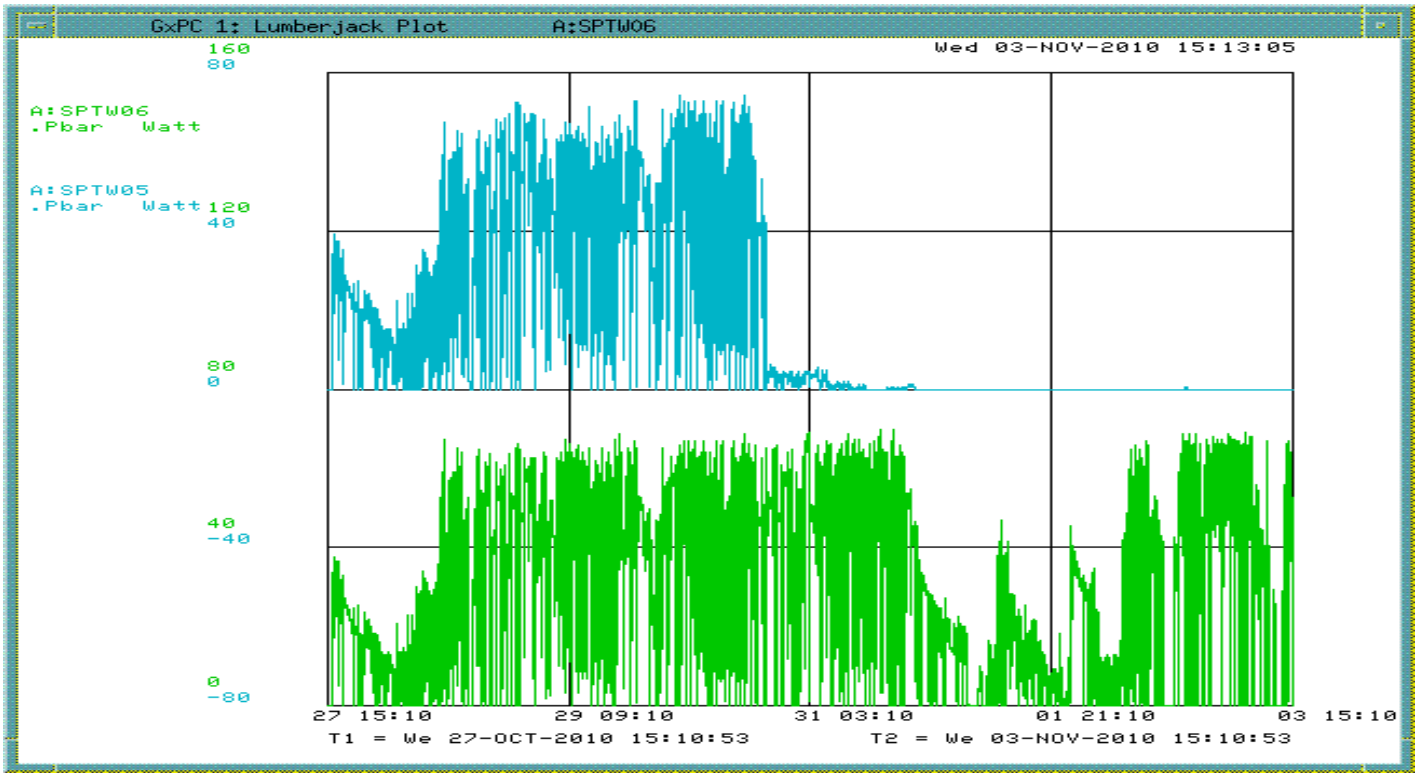
## Plots

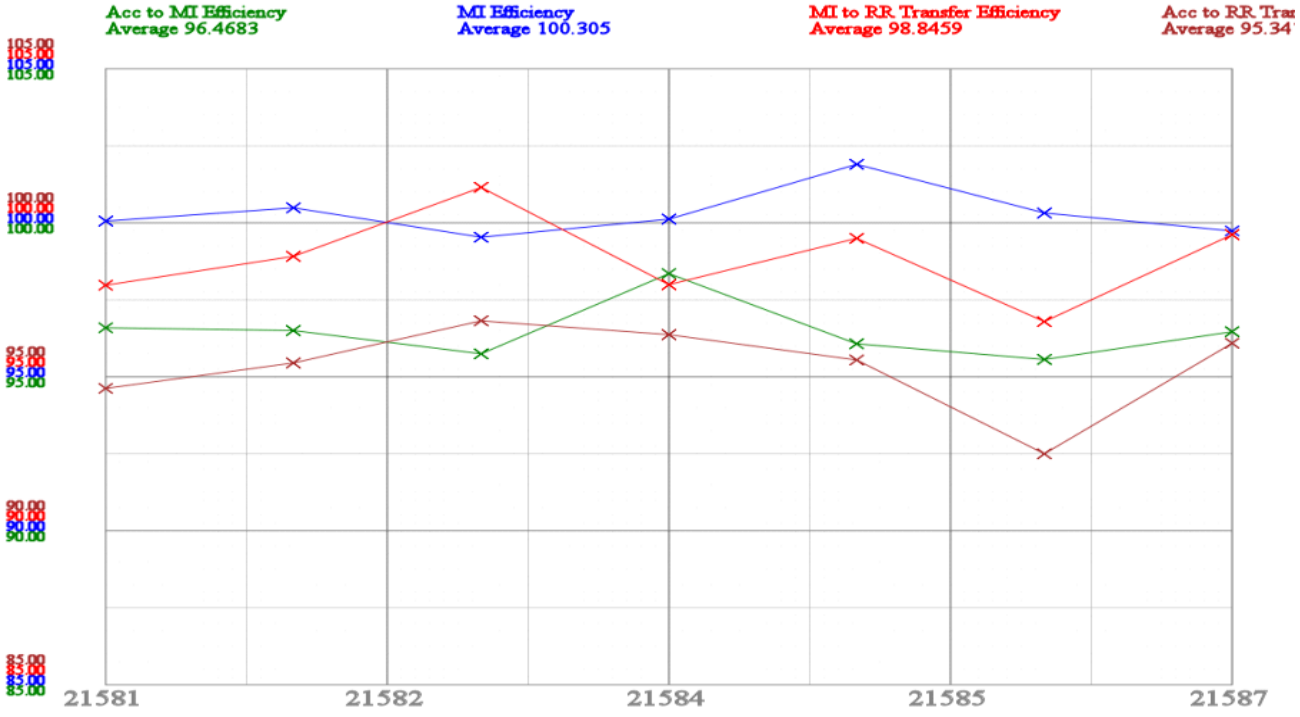

Accelerators (24.0 hrs.)
Thu Nov 4 07:27:55 2010
T:IBEAMB
A:IBEAM
C.LUMAVG
R:BBEAM
D0 access
Klystron Buncher trip
Pmag water skid work
Booster losses
RF2 driver RF low
C1 flywheel changeout
Radtrip AP50 deb bpm rack
T:VC39 Fuse Fault/Replacement
D:ISEPV troubles
C:S3D2A feeddown quench indication
D0 Access
CDF Access
TeV A-E Sectors access
TeV C sector secure
Tev Orbit checks
Wed 08:00 03-Nov 2010
Wed 12:00 03-Nov 2010
Wed 16:00 03-Nov 2010
Wed 20:00 03-Nov 2010
Thu 00:00 04-Nov 2010
Thu 04:00 04-Nov 2010
Thu 08:00 04-Nov 2010


Wed Nov 03 08:00:00 CDT 2010 -- Thu Nov 04 08:00:00 CDT 2010
Stack Size (mA)
Stack Parameters
Emittances (π mm mr)
Time
08:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
00:00
02:00
04:00
06:00
08:00
A:IBEAM
A:STCKRT
Hourly Rate
M:TOR109
A:PRDCTN
A:EMT3HN
A:EMT3VN
Ave Time between $81's


GxPB 1 Shots to Recycler
Thu 04-NOV-2010 07:39:014
A:IBEAM
+E_760 mA
A:STAKRT
+E_760 mA/h
A:PRDCTN
+Pbar2 E-6
M:TR105B
.MInj E12
A:EMT3HN
.E_760 pimm
G:TURN14
.Mau
F:MW1SEM
.Safty ppp
A:STCKAV
oE_864 Secs
03 08:00
03 14:00
03 20:00
04 02:00
04 08:00
T1 = We 03-NOV-2010 08:00:00
T2 = Th 04-NOV-2010 08:00:00


GxPB 1 Shots to Recycler
D:BPMI10 McG
Mean 24031
+/- 3.2391
StdDev 491.28
Points 23005
A:STAKRT mA/h
Mean 19.042
+/- 0.17796
StdDev 6.347
Points 1272
A:PRDCTN E-6
Mean 16.862
+/- 0.12853
StdDev 3.9843
Points 961
M:TR105B E12
Mean 7.9079
+/- 0.00057726
StdDev 0.089689
Points 24140
T1=03-NOV-2010 08:00:00


GxPC 1: Lumberjack Plot
A:SPTW06
Wed 03-NOV-2010 15:13:05
A:SPTW06
.Pbar Watt
A:SPTW05
.Pbar Watt
160
80
120
40
80
0
40
-40
0
-80
27 15:10
29 09:10
31 03:10
01 21:10
03 15:10
T1 = We 27-OCT-2010 15:10:53
T2 = We 03-NOV-2010 15:10:53


Acc to MI Efficiency
Average 96.4683
MI Efficiency
Average 100.305
MI to RR Transfer Efficiency
Average 98.8459
Acc to RR Trai
Average 95.34
105.00
100.00
95.00
90.00
85.00
21581
21582
21584
21585
21587

| Column 1 Number_0_Pbar Transfer Shot # | Column 4 Number_3_Transfer Time | | Column 21 Number_20_A:IBEAMB sampled on $91 (A:BEAM7), E10 | Column 22 Number_21_A:IBEAMB sampled on $94 (A:BEAM9), E10 | Unstacked (mA) | Column 23 Number_22_R:BEAMS (R:BEAME0[0]) pre xfer E10 | Column 24 Number_23_R:BEAM (R:BEAME0[1]) post xfer, E10 | Stashed | Acc to RR Eff | Acc to MI Eff | Acc to MI2 Eff | Acc to MI * Acc to MI2 Efficiency | Transfers | Sets | Column 5 Number_4_Acc Horizontal Emittance | Column 6 Number_5_Acc Vertical Emittance | Column 8 Number_7_Acc Longitudinal Emittance |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Totals => | | | | 324.57 | | | 305.42 | 94.10% | 96.18% | 96.30% | 92.62% | 28 | 7 | 6.6877 | 5.986 | 1.8697 |
| | Daily Average => | | | | 324.57 | | | 305.42 | | | | | 28 | 7 | | | |
| 21587 | Thursday, November 04, 2010 | 6:37 | 27.90 | 5.48 | 24.79 | 248.70 | 272.26 | 23.78 | 95.91% | 96.54% | 95.98% | 92.66% | 3 | 1 | 6.152 | 5.51 | 1.847 |
| 21586 | Thursday, November 04, 2010 | 5:19 | 118.60 | 7.18 | 115.78 | 145.86 | 249.80 | 106.18 | 91.71% | 95.18% | 95.45% | 90.85% | 7 | 1 | 8.677 | 7.593 | 1.652 |
| 21585 | Wednesday, November 03, 2010 | 17:34 | 26.74 | 6.80 | 22.50 | 478.18 | 499.17 | 21.53 | 95.69% | 96.80% | 98.11% | 94.96% | 3 | 1 | 5.95 | 5.62 | 1.967 |
| 21584 | Wednesday, November 03, 2010 | 16:40 | 28.63 | 7.18 | 23.93 | 458.21 | 480.56 | 23.02 | 96.21% | 98.28% | 98.29% | 96.60% | 3 | 1 | 6.278 | 5.765 | 1.967 |
| 21583 | Wednesday, November 03, 2010 | 15:23 | 26.23 | 4.77 | 23.58 | 439.40 | 461.66 | 22.85 | 96.92% | 96.45% | 95.80% | 92.40% | 3 | 1 | 5.435 | 5.16 | 1.853 |
| 21582 | Wednesday, November 03, 2010 | 14:24 | 28.04 | 7.37 | 22.89 | 420.82 | 442.09 | 21.83 | 95.35% | 96.48% | 97.15% | 93.73% | 3 | 1 | 6.8 | 5.855 | 1.974 |
| 21581 | Wednesday, November 03, 2010 | 13:26 | 98.72 | 13.06 | 91.11 | 338.24 | 422.87 | 86.24 | 94.66% | 96.49% | 96.41% | 93.02% | 6 | 1 | 7.512 | 6.4 | 1.828 |

D:ISEPV Failure